DOCUMENT RESUME

ED 128 730 CG 010 839

AUTHOR Kennett, Keith F.; Grant, Edward
TITLE Family Environment, Socioeconomic Status and Academic Achievement.
PUB DATE 75
NOTE 15p.; Paper presented at the Annual Convention of the American Psychological Association, (83rd, Chicago, Illinois, August 30 to September 2, 1975); not available in hard copy due to marginal legibility of original document.

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS *Academic Achievement; College Students; *Family Environment; *Family Influence; Homogeneous Grouping; *Intelligence Factors; Research Projects; *Socioeconomic Status; *Upper Class

ABSTRACT

Numerous investigations have used father's occupation as the central index in reports showing, in heterogeneous samples, a definite relationship between socioeconomic status (SES) and measured intelligence on academic achievement in favour of the upper SES individual. Thus, commonly used terms have emerged, such as "middle-class bias" and "formal language." However, fewer studies, of homogeneous samples, have involved the family environment as an additional influence on behaviour. In a sample of male first-year university undergraduates, the study reports that, even after high school academic selection processes, verbal meaning (IQ sub-test) and verbal expression (Grade 12 subject) were significantly correlated with father's occupation (SES) and home environment "possessions," in favour of the upper SES individual. It would appear that formal education is still hindered or enhanced by the home situation. (Author)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED128730

FAMILY ENVIRONMENT, SOCIOECONOMIC STATUS AND ACADEMIC ACHIEVEMENT[1]

"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY
KEITH F. KENNETT
TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE NATIONAL INSTITUTE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER."

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

KEITH F. KENNETT, Ph.D., and EDWARD GRANT, Ph.D.

Department of Psychology,

College of Cape Breton,

Sydney, Nova Scotia

CANADA.

BEST COPY AVAILABLE

Paper submitted for the Eighty-Third Annual Convention of the American Psychological Association, Chicago, Illinois.

August 30-September 3, 1975.

HARD COPY NOT AVAILABLE

[1] Research supported by Grant No. 256 and 330, University Research Council.

Numerous investigations have reported that a definite relationship exists between socioeconomic status (SES) and measured intelligence (IQ) and also with academic achievement, in favour of the upper SES individual. Such status group studies have centred upon social stratification largely in terms of occupational prestige ratings (See Blishen, 1967; Pineo & Porter, 1967), frequently using parent's occupational level as the sole determinant of SES membership when it should be considered as the central index rather than the synonym. No doubt, occupation of the head of the household is the central factor in determining SES membership but what else does it tell?

In general, father's occupation means that all family members enjoy a social equality which qualifies them for intimate association with other in the same status group. In fact, father's occupation suggests what can be done and what cannot be done, or in other words the availability and utilization of a variety of services. For example, it indicates the ease or difficulty of obtaining medical care (Hurley, 1969) or the utilization of educational facilities in terms of whether family members, on the average, become "drop-outs" or "stay-ins" (Jencks, 1968), or even whether the number of children in a family will influence intellectual performances by its members (Kennett, 1973a; Kennett & Cropley, 1970; Kennett and Grant, 1975).

Thus, in an examination of the relationship between IQ and SES family environment plays an important role. One important skill, nurtured and developed at home and extended at school, is that of language. It is then not surprising that language competence distinguishes one social status group from another because of the ability or inability to manipulate verbal symbols. In upper SES

families the competence in formal language is advantageous as this ability to handle verbal symbols is essential in the process of thinking and problem solving associated with mental abilities. As Terman and Merrill (1937) concluded, language essentially is the shorthand of the higher thought process. More recently, Eells, Davis, Havighurst, Herrick, and Tyler (1951) pointed out that the largest advantage gained by middle or upper SES children was on verbal items of intelligence tests. Although the middle class child is capable of responding to, manipulating, and understanding a public language (Bernstein, 1968), he gains success in school by effectively handling another language based on a formal or middle class vocabulary.

From such an awareness on the part of researchers came the common usage of terms like "middle class bias" in intelligence testing and "middle class values" in social behaviour. Unfortunately, these terms suggest a simplistic lumping together of intellectual behaviour and cultural values for large groups of individuals. Thus, a re-examination of differences between status groups led, for example, to a report by Backman (1971) who found, in a sample of Grade Twelve students from Project Talent, significant differences in both the patterns and levels of mental abilities between lower-middle and upper-middle SES subjects. However, these significant patterns on mental abilities across SES groups were deemed by Backman (1971) too small to be considered important.

Later, Kennett (1972) reported that in a somewhat homogeneous sample of middle-to-upper SES Grade Six, Seven, and Eight students,

upper SES children were superior to middle SES children on IQ performance. This was, in part, surprising for all children in the sample came from one of two very similar residential areas and had attended, for all or most of their formal schooling, one or other of two schools rated as "good middle class". With few exceptions, the children had played together since at least Grade One, had lived in the same residential area of Regina, had utilized the same provincial funded medical services, and had enjoyed the apparent outward benefit of the same or very similar formal education.

Such investigations point to the importance of the home environment as a major determinant of behaviour. Kifer (1975) concluded that children who receive support and encouragement from the home are more likely to achieve well and possess positive personality characteristics. The home situation influences intellectual functioning and academic achievement, or as Armor (1972) stated on a reanalysis of the Equality of Educational Opportunity Survey data (EEO),

> ....one general trend which can be discussed across the various groups is the relative strength of household items and parents' education. One or both of these factors are the strongest predictors of achievement in every regional and racial category (p. 221).

Aware of the necessity to go beyond father's occupation in order to understand status group influence on behaviour, the present study examines the importance of "the goodness of the home" in determining intellectual performance and academic achievement in a sample of first-year undergraduate male students enrolled and about to commence studies in a Canadian university.

METHOD

Subjects

The sample consisted of 98 male first-year undergraduates attending, in the fall of 1970, the University of Saskatchewan Regina Campus. These 98 undergraduate freshmen had completed their secondary education and were all of white European ethnic origin. The mean age of this male sample was 19 years 8 months (SD= 2 years 3 months; range 17 years 7 months to 25 years 5 months).

Tests

The adult level of the revised 1962 Tests of Primary Mental Abilities (PMA), an accepted measure of conventional intelligence, was used. Scoring of the PMA and calculation of IQs was carried out according to the instructions in the test manual (Thurstone, 1963).

Socioeconomic status was based on father's occupation (Kennett, 1972) while an attempt to get at the "life-style" of the subject's family life was obtained by using a reworked version by MacArthur and Elley (1963) of the Gough Home-Index (1949). The scale consists of a twenty item questionnaire requiring only "yes" or "no" answers.

Procedure

Both measures were administered in September 1970. On the basis of specific information pertaining to father's occupation the

subjects were allocated to SES groups; SES I included subjects from professional homes, SES II subjects whose fathers were semi-professional and managerial, SES III those from families where the father belonged to the occupational group of lower managerial, salesmen and clerks, SES IV subjects of skilled workers, supervisors in trades, and tradesmen, while SES V consisted of subjects from homes where fathers were semi-skilled or unskilled.

The Grade Point Average (GPA) for the final year of high school (Grade Twelve) was obtained for each subject from the records of the University.

RESULTS

The full sample of 98 males had a mean IQ of 120.4 (SD = 12.0; range 92 to 150) and a Grade Point Average of 69.8 (SD = 6.7; range 53 to 95). Means and standard deviations of IQ score and GPA score for the five SES groups are given in Table 1. Non-significant correlations were obtained among these groups. However, correlational data, showed significance between IQ (verbal meaning) and SES ($r = 0.27$; $p < .01$) and between English expression and SES ($r = 0.25$; $p < 0.01$) in favour of the upper SES subject.

The goodness of the home environment showed certain significant relationships between father's occupation (SES) and certain "possessions" in favour of the upper SES individual. The correlations item for item on the Home-Index in relation to SES are given in Table 2.

DISCUSSION

The present study shows that secondary measures of SES, such as the Gough Home-Index, are valuable and useful ways of investigating the home environment. However, modifications and more detailed information in specific areas may further assist in an examination of what are beneficial factors associated with educational success. Just as the home environment of the mentally retarded needs to be further investigated in order to comprehend factors relating to social competence (see Kennett, 1973b), so a further investigation is required to comprehend factors relating to academic competence.

Home environment opportunities available to upper SES individuals aid in both intellectual performance and academic achievement. For example, father's level of education (both high school and university), educational encouragement through the availability and utilization of library facilities (at home and from community libraries), and educational experiences gained from annual holidays away from the home town, are important external influences in the home environment, highly correlated with father's occupation, and seemingly enhancing the development of those attributes deemed necessary for all-rounded success in formal education.

While previous studies (e.g. Burnes, 1970; Kennett, 1973c) have reported a definite relationship between measured intelligence and SES in favour of the high SES groups, the present study reports that such a relationship involving significantly better formal language skills (Verbal Meaning, PMA; English Expression, Grade Twelve) in

favour of the upper SES individual, persists at first-year university level where such a relationship would seemingly be weaker because of academic selection processes. Such a finding adds support to Jencks (1972) who concluded that "class differences seem to be greatest for verbal ability and general information (p.78)".

Although all subjects had completed high school education and were university freshmen, father's occupation (and subsequently his level of education) and the "possessions" of the home environment still separate individuals, on the average, in terms of verbal meaning and verbal expression. The resource competence of the home seems to centre on the educational attainment, at least, of the father, thus supporting other studies (e.g. Coopersmith, Church, & Markowitz, 1960) where the number of years of completed education on the part of the parents was shown to be highly and positively correlated with SES membership. Furthermore, the present study shows father's level of education to be a significant factor in the home, while mother's level of education is not correlated to the SES membership of the family. This does not mean that mother's influence as an educational factor is of less importance for she may reflect a past philosophy regarding restricted higher education for girls, and may contribute greatly in terms of her real world experience and knowledge.

While the study has concentrated on environmental influences of academic achievement, other factors may also be involved. For example, Kasl (1974) reported a biochemical correlate of achievement and motivation, while Kennett and Cropley (1975) have shown that the same biochemical correlate (serum uric acid) is related to divergent thinking. Thus, biological factors may also have direct influence on how well an individual performs in a variety of school tasks.

Whatever the line of research a renewed emphasis on the home environment seems in order (Kennett, 1975). Smith (1972), in a re-analysis of the EEO Survey, showed that an underestimate of the importance of family factors in relation, especially, to student achievement had occurred. Other studies (e.g. Goodman, 1959; Katzman, 1971; Raymond, 1968), have added support to the strong effect of home factors on achievement. The present study shows that even at first-year university level male students reflect the importance of their home environment:

> .... there is considerable evidence that "non-school" factors may be more important determinants of educational outcomes than are "school" factors (Averch, Carroll, Donaldson, Kiesling, & Pincus, 1971, p. xii).

Educational problems may not be confined to formal educational remedies, but may necessitate a re-examination of what "possessions" exist in the home in order to evaluate what enhances or hinders what should occur at school.

REFERENCES

Armor, D.J. School and family effects on black and white achievement: a reexamination of the USOE data. In F. Mosteller & D. Moynihan (Eds.), On equality of educational opportunity. New York: Random House, 1972.

Averch, H.A., Carroll, S.J., Donaldson, T.S., Kiesling, H.J., & Pincus, J. How effective is schooling? A critical review and synthesis of research findings. Santa Monica: Rand Corp., 1971.

Backman, M.E. Patterns of mental abilities of adolescent males and females from different ethnic and socio-economic backgrounds. Proceedings of the 79th Annual Convention of the American Psychological Association, 1971, 6, 511-512.

Bernstein, B. Some sociological determinants of perception. British Journal of Sociology, 1958, 9, 159-174.

Blishen, B.R. A socio-economic index for occupations in Canada. The Canadian Review of Sociology and Anthropology, 1967, 4, 41-53.

Burnes, K. Patterns of WISC scores for children of two socio-economic classes and races. Child Development, 1970, 41, 493-499.

Coopersmith, S., Church, C., & Markowitz, J. Creativity and social class. Paper presented at the meeting of the Eastern Psychological Association, 1960, 148.

Eells, K., Davis, W.A., Havighurst, R.J., Herrick, V.E., & Tyler, R.W. Intelligence and cultural differences. Chicago: Chicago University Press, 1951.

Goodman, S.M. The assessment of school quality. Albany: New York State Education Department, 1959.

Gough, H. A short social status inventory. Journal of Educational Psychology, 1949, 40, 52-56.

Hurley, R. Poverty and mental retardation. New York: Vintage Books, 1969.

Jencks, C. Social stratification and higher education. Harvard Educational Review, 1968, 38, 277-316.

Jencks, C. Inequality: a reassessment of the effect of family and schooling in America. New York: Basic Books, 1972.

Kasl, S. V. Are there any promising biochemical correlates of achievement behavior and motivation? The evidence for serum uric acid and serum cholesterol. Review of Educational Research, 1974, 44, 447-462.

Katzman, M. T. The political economy of urban schools. Cambridge: Harvard University Press, 1971.

Kennett, K. F. Intelligence and socioeconomic status in a Canadian sample. The Alberta Journal of Educational Research, 1972, 18, 45-50.

Kennett, K. F. Measured intelligence, family size and socioeconomic status. The Alberta Journal of Educational Research, 1973, 19, 314-320. (a)

Kennett, K. F. The Family Behavior Profile. St. Francis Xavier University Press: Sydney, 1973 (b)

Kennett, K. F. A within cultural comparison: intelligence, family size and socioeconomic status. Paper presented at the XIVth Interamerican Congress of Psychology, Sao Paulo, Brazil, April 14-19th, 1973 (c)

Kennett, K. F. Family environment, family size and measured intelligence. Interchange, 1975 (in press).

Kennett, K. F., & Cropley, A.J. Intelligence, family size and socioeconomic status. Journal of Biosocial Science, 1970, 2, 227-236.

Kennett, K. F., & Cropley, A. J. Uric acid and divergent thinking: a possible relationship. British Journal of Psychology, 1975, 66, 175-180.

Kennett, K. F., & Grant, E. Family environment, family size and measured intelligence, Paper presented at Thirty-Sixth Annual Meeting, Canadian Psychological Society, Quebec City, June 18-20, 1975.

Kifer, E. Relationships between academic achievement and personality characteristics: a quasi-longitudinal study American Educational Research Journal, 1975, 12, 191-210.

MacArthur, R.S., & Elley, W.B. The reduction of socioeconomic bias in intelligence testing. British Journal of Educational Psychology, 1963, 33, 107-119.

Pineo, P.C., & Porter, J. Occupational prestige in Canada. The Canadian Review of Sociology and Anthropology, 1967, 4, 24-40.

Raymond, R. Determinants of the quality of primary and secondary public education in West Virginia. Journal of Human Resources, 1968, 3, 450-470.

Smith, M.S. Equality of educational opportunity: The basic findings reconsidered. In F. Mosteller & D. Moynihan (Eds.), On equality of educational opportunity. New York: Random House, 1972.

Terman, L.M., & Merrill, M.A. Measuring intelligence. London: Harrap, 1937.

Thurstone, L. G. Examiner's manual: Primary Mental Abilities. Chicago: Science Research Associates, 1963.

Table 1

Means and Standard Deviations of IQ Scores (PMA) and Grade Point Averages Divided into SES Subgroups

Tests		SES Subgroups I	II	III	IV	V	Total
	n	12	14	26	20	26	98
PMA (IQ)	Mean	118.2	120.1	119.2	119.6	121.9	120.4
	SD	14.1	13.2	14.1	10.7	9.0	12.0
	n	12	14	26	20	26	98
Grade Point Average (Grade XII)	Mean	70.6	69.4	70.7	69.7	68.7	69.8
	SD	7.6	8.0	8.5	9.3	11.8	6.7

These data satisfy the requirements of within cell homogeneity of variance (IQ cells: F_{max} = 2.4, df 5/25; G.P.A. cells: F_{max} = 2.4, df = 5/25)

Table 2

Correlations between Occupation of Father (SES) and Items Reflecting Goodness of Home Environment (Home-Index)

Father's occupation (SES) with:

1)	High school education of father	.56	**
2)	University education of father	.56	**
3)	Own over 100 hard-covered books	.37	**
4)	Receive daily newspaper	.37	**
5)	Takes a annual holiday	.31	**
6)	Borrows books from a library	.29	**
7)	Has own desk	.24	**
8)	Possesses an encyclopedia	.23	**
9)	Owns a piano	.22	*
10)	Father belongs to clubs	.22	*
11)	High school education of mother	.21	*
12)	Owns a hi-fi or record player	.20	*
13)	Owns own home	- .17	*
14)	Mother belongs to clubs	.13	
15)	Student in sample belongs to clubs	.11	
16)	Has a garage or carport	.10	
17)	Has lessons paid for (other than schooling)	.08	
18)	Has own room	.06	
19)	University education of mother	.05	
20)	Owns a car	.02	

** $p < .01$

* $p < .05$